

**What is claimed is:**

1. A bulk material baler comprising:

a frame

a plurality of bale strap guide tracks deployed on said frame to space a plurality  
5 of a bale strap loops substantially about 9 and ¼ inches from adjacent bale strap loops;

a plurality of bale strap drivers, each fixedly attached to said frame and each  
operatively aligned with one of the bale strap guide tracks, said bale strap drivers driving  
strap through at least two adjacent strap guide tracks simultaneously; and

a plurality of bale strap fasteners, each fixedly attached to said frame and each  
operatively aligned with one of the bale strap guide tracks.

2. The apparatus of Claim 1 wherein the bale strap guide tracks, strap drives and fasteners  
are each six in number.

3. A bulk material baler comprising:

a baler base;

a plurality of support head assemblies supported by a translating carriage  
slideably attached to said base;

a plurality of bale strap guide tracks supported by said support head assemblies  
and configured to space a plurality bale strap loops substantially about 9 and ¼ inches  
from adjacent bale strap loops;

a plurality of bale strap drivers supported by said support head assemblies, each  
operatively aligned with one of said bale strap guide tracks, said bale strap drivers  
driving strap through at least two adjacent strap guide tracks simultaneously; and

a plurality of bale strap fasteners supported by said support head assemblies and each operatively aligned with one of said bale strap guide tracks.

4. The apparatus at Claim 3 wherein each of said wire fasteners is propelled by an electro-servo motor.

5. The apparatus of Claim 3 wherein each of said strap drivers is propelled by an electro-servo motor.

6. The apparatus of Claim 3 wherein said support head assembly has six heads, each of said heads supporting one bale strap guide track, one bale strap driver and one strap fastener.

7. The apparatus of Claim 6 wherein each of said strap fasteners is propelled by an electro-servo motor.

8. The apparatus of Claim 6 wherein each of said strap drivers is propelled by an electro-servo motor.

9. The apparatus of Claim 3 wherein said carriage assembly has three support heads, each of said heads supporting one bale strap guide track, one bale strap driver and one strap fastener.

10. A bulk material baling strap feed comprising:

a bracket incorporated into a bulk material baler;

a plurality of strap guide tracks supported by said bracket, said tracks controlling the trajectory of bale strap loops, and said tracks being substantially about 9 and ¼ inches apart;

at least one strap fastener supported by said bracket and operatively aligned with said strap guide tracks; and

at least one pair of strap drive wheels, said wheels driving said strap by frictional contact with said baling strap, said at least one drive wheel pair being in a plane perpendicular to the plane of said baling strap loop said at least one drive wheel pair being propelled by an electro-servo motor, and said wheels driving said strap through at least two adjacent strap guide tracks simultaneously.

11. The apparatus of Claim 10 wherein the electric servo motor is aligned with its longitudinal axis parallel to the plane of said baling strap loop.

12. The apparatus of Claim 10 wherein said electric servo motor is aligned with its drive shaft parallel to the plane of said baling strap loop.

13. The apparatus of Claim 10 wherein the electric servo motor is aligned with its drive shaft perpendicular to the plane of the strap drive wheels.

14. The apparatus of Claim 10 wherein the bracket is configured to space bale strap loops substantially about 9 and  $\frac{1}{4}$  inches apart when incorporated into a bulk material baling machine.

15. The apparatus of Claim 10 wherein said bracket is substantially about 9 and  $\frac{1}{4}$  inches wide.

16. A bulk material baling apparatus comprising:

a bale forming and binding station, a bale binding device, said binding device employing strap for binding a bale of bulk material contained within said binding station, said binding device having a support bracket housing at least one electro-servo strap propulsion unit, at least one articulated guide track and at least one fastening head;

said binding device receiving the wire through the strap propulsion unit, said propulsion unit impelling the strap through a plurality of adjacent articulated guide tracks simultaneously, said articulated guide tracks directing the strap in a trajectory surrounding the bale, said fastener, upon a length of the strap completing a circuit of the surrounding trajectory, fastening the complete circuit length of the strap into a closed loop about the bale; and

said support bracket being configured to space said closed loop of bale strap substantially about 9 ¼ inches apart from an adjacent bale wire loop.

17. The apparatus of Claim 16 wherein the bale strap guide tracks, strap propulsion units, propulsion electro-servo motors, fasteners and support brackets are each six in number.
18. The apparatus of Claim 16 wherein said strap propulsion units have at least one pair of drive wheels, said wheels being in a plane non-parallel to the plane of said baling strap loop.
19. The apparatus of Claim 17 wherein said at least one pair of strap drive wheels are in a plane non-parallel to the plane of said baling strap loop.
20. The apparatus of Claim 16 wherein the drive shaft of said electric servo motor is parallel to the plane of the bale strap loop.
21. The apparatus of Claim 17 wherein the drive shafts of all six of said propulsion units are parallel to the plane of said bale strap loops.
22. The apparatus of Claim 16 wherein the drive shaft of said electric servo motor is perpendicular to the plane of the said at least one pair of drive wheels.
23. A method of baling bulk material comprising:  
compressing a volume of bulk material;

driving a plurality of adjacent baling straps around said volume simultaneously with electro-servo motors in propulsive frictional contact with said straps through at least one pair of drive wheels, said drive wheel pairs being in a plane non-parallel with the plane of travel of said baling straps;

5 guiding said straps in a loop around the circumference of said volume of bulk material with guide tracks;

fastening said straps into closed loops; and

releasing the bound bale.

24. The method of Claim 23 wherein said strap loops are spaced substantially about 9 and 10  $\frac{1}{4}$  inches apart when incorporated into a bulk material baling machine.